

REMARKS

Status of the Claims:

Claims 1-11, 13-25 and 27-33 are pending in the present application. Claims 12 and 26 have been previously canceled. Claims 1, 2, 15, 16, 31 and 32 have been amended herein and are fully supported by the original specification (pages 5-7 and originally filed claims 2-3). Claims 3-6, 13, 17-20, 29, 30 and 33 have been canceled herein without prejudice. Entry of the amendments to claims 1, 2, 15, 16, 31 and 32 and cancellation of claims 3-6, 13, 17-20, 29, 30 and 33 are respectfully requested.

Claim Rejections – 35 USC § 103 Huang/Moeller

The Examiner has maintained a rejection of claims 1-3, 5-9, 13-17, 19-23 and 27-33 under 35 USC 103(a) as being unpatentable over Huang (US 6,342,578) in view of Moeller et al. (US 6,630,050).

Applicants have amended independent claims 1, 15 and 32 to reflect that the substituted cyclic monoanhydride is a substituted succinic monoanhydride. Applicants believe this amendment overcomes the rejection under 35 USC 103(a) on the grounds that the amended claims are not *prima facie* obvious due to the fact that neither Huang nor Moeller et al. teach, suggest or motivate one of ordinary skill in the art to choose one cyclic monoanhydride over any other cyclic monoanhydride among the numerous possibilities. More specifically, Huang and Moeller et al. do not teach, suggest or motivate one of ordinary skill in the art to choose a substituted succinic monoanhydride over any other cyclic monoanhydrides.

Assuming, *arguendo*, that the Examiner could establish a proper *prima facie* case of obviousness, it is respectfully submitted that Applicant's claimed invention as amended exhibits unexpected results in the use of a substituted succinic monoanhydride versus other cyclic monoanhydrides that rebut such. The Examiner stated in the Final Office Action dated 2/9/07 that "*[t]he anhydride, substituted or not, reacts with free hydroxyl groups on the polyester of Huang. Thus a substituted or unsubstituted anhydride functions equivalently in the reaction of Applications Claims.*" Applicants submit that a substituted succinic monoanhydride and an unsubstituted cyclic monoanhydride do not function equivalently; specifically the degree of reaction completion is unexpectedly different. The data below illustrates the functional difference.

The following table presents data published in Examples 1-3 of US patent number 7,087,706 (Assignee: INVISTA North America S.a r.l., Filing Date: 2/6/2004, copy attached).

	Succinic Anhydride	Octenyl Succinic Anhydride	Octadecenyl Succinic Anhydride
Concentration (wt%)	0.4	0.4	0.4
Residence Time (minutes)	2.4	2.5	2.5
Unreacted Anhydride (%)	18	0	0

The reactor setup and conditions used in Examples 1-3 of US 7,087,706 were as follows: The continuous reactor system consisted of a primary esterifier, secondary esterifier, low polymerizer and high polymerizer. This reactor system was used to prepare resins with substituted and unsubstituted cyclic anhydrides. A paste was fed into the primary esterifier; the paste consisted of PTA, ethylene glycol (EG), isophthalic acid (IPA), diethylene glycol (DEG) and antimony trioxide as the polycondensation catalyst. The PTA/EG mole ratio was 1.1095. IPA concentration was 2.5 wt%. DEG concentration was 0.55 wt%. Antimony trioxide concentration was 234 ppm Sb. A solution of cobalt acetate (23.5 ppm Co) and poly phosphoric acid (phosphorus/cobalt mole ratio 1.1:1) was added in the transfer line between the primary and secondary esterifier. The primary esterifier temperature was 260 °C and pressure was 1.5 barg. The secondary esterifier temperature was 268 °C and pressure was 1.0 barg. The low polymerizer temperature was 275 °C and pressure was 20 mbar. The high polymerizer temperature was 280 °C and the vacuum level was controlled to give a target polymer IV of 0.58. Molten succinic anhydride, octenyl succinic anhydride and octadecenyl succinic anydride were metered through a pump into the transfer line, containing a static mixer, at the outlet of the high polymerizer, prior to extrusion.

Applicants submit that the data from US 7,087,706 demonstrates that molten succinic anhydride does not react completely at a standard residence time, whereas octenyl succinic anhydride and octadecenyl succinic anhydride do react completely. Therefore, octenyl succinic anhydride and octadecenyl succinic anhydride produce unexpected results and do not function equivalently to succinic anhydride. The unexpected results are beneficial because a fully reacted cyclic

monoanhydride cannot affect downstream processing, product composition or by-product formation. In the presently claimed invention, the substituted succinic monoanhydride carries the additives, reacts fully and has no adverse impact on the composition. Neither Huang nor Moeller et al. teach, motivate or suggest the selection of a substituted succinic monoanhydride over other cyclic monoanhydrides to achieve these unexpected results.

Additionally, Applicants respectfully submit that Moeller et al. teaches away from the claimed invention as amended. As the Examiner pointed out in the office action dated June 27, 2006, Moeller et al. '*discloses a range of substituted and unsubstituted anhydrides to be functionally equivalent*'. Therefore, Moeller et al. teaches that all anhydrides are functionally equivalent. Based upon the data presented above, substituted succinic monoanhydrides and other cyclic monoanhydrides are not functionally equivalent. Therefore, Moeller et al. teaches away from the presently claimed invention.

Applicants respectfully submit that, with consideration of amended independent claims 1, 15 and 32, the current rejection under 35 USC 103(a), obviousness under Huang in view of Moeller et al., has been effectively traversed and its withdrawal is therefore respectfully requested.

Claim Rejections – 35 USC § 103 Huang/Pfaendner

The Examiner has rejected claims 10 and 24 under 35 USC 103(a) as being unpatentable over Huang (US 6,342,578) in view of Pfaendner (US 5,693,681).

Applicants have amended independent claims 1 and 15 from which claims 10 and 24 depend to reflect that the substituted cyclic monoanhydride is a substituted succinic monoanhydride. Applicants believe these amendments overcome the rejection under 35 USC 103(a) on the grounds that the amended claims are not *prima facie* obvious due to the fact that neither Huang nor Pfaendner teach, suggest or motivate one of ordinary skill in the art to choose one cyclic monoanhydride over any other cyclic monoanhydride among the numerous possibilities. More specifically, Huang and Pfaendner do not teach, suggest or motivate one of ordinary skill in the art to choose substituted succinic monoanhydrides over any other cyclic monoanhydrides.

Assuming, *arguendo*, that the Examiner could establish a proper *prima facie* case of obviousness, it is respectfully submitted that Applicant's claimed invention as amended exhibits unexpected results that rebut such. Applicants' arguments are the same as above (in Huang/Moeller) with regard to the comparison of substituted succinic monoanhydrides versus other cyclic monoanhydrides. Applicants respectfully submit, based upon the unexpected results described above, that it would not be obvious to one skilled in the art to use substituted succinic anhydrides versus other cyclic monoanhydrides. Applicants believe the point of whether Pfaendner teaches functional equivalency between polyethylene terephthalate and polybutylene terephthalate is moot.

Applicants respectfully submit that, with consideration of amended independent claims 1 and 15 from which 10 and 24 depend, the current rejection under 35 USC 103(a), obviousness under Huang in view of Pfaendner, has been effectively traversed and its withdrawal is therefore respectfully requested.

Claim Rejections – 35 USC § 103 Huang/Moeller/Yamamoto

The Examiner has maintained a rejection of claims 11 and 25 under 35 USC 103(a) as being unpatentable over Huang (US 6,342,578) and Moeller et al. (US 6,630,050) in view of Yamamoto (JP Patent No. 06100767A).

Applicants have amended independent claims 1 and 15 from which claims 11 and 25 depend to reflect that the substituted cyclic monoanhydride is a substituted succinic monoanhydride. Applicants believe these amendments overcome the rejection under 35 USC 103(a) on the grounds that the amended claims are not *prima facie* obvious due to the fact that neither Huang, Moeller et al. or Yamamoto teach, suggest or motivate one of ordinary skill in the art to choose one cyclic monoanhydride over any other cyclic monoanhydride among the numerous possibilities. More specifically, Huang, Moeller et al. and Yamamoto do not teach, suggest or motivate one of ordinary skill in the art to choose a substituted succinic monoanhydride over any other cyclic monoanhydrides.

Assuming, *arguendo*, that the Examiner could establish a proper *prima facie* case of obviousness, it is respectfully submitted that Applicant's claimed invention as amended exhibits unexpected results that rebut such. Applicants' arguments are the same as above (in Huang/Moeller) with regard to the comparison of a substituted succinic monoanhydride versus

other cyclic monoanhydrides. Applicants respectfully submit, based upon the unexpected results described above, that it would not be obvious to one skilled in the art to use a substituted succinic anhydride versus other cyclic monoanhydrides. Applicants believe the point of whether Yamamoto teaches functional equivalency between polyethylene terephthalate and polyethylene naphthalate is moot.

Applicants respectfully submit that, with consideration of amended independent claims 1 and 15 from which 11 and 25 depend, the current rejection under 35 USC 103(a), obviousness under Huang and Moeller et al. in view of Yamamoto, has been effectively traversed and its withdrawal is therefore respectfully requested.

Claim Rejections – 35 USC § 103 Huang/Savariar-Hauck

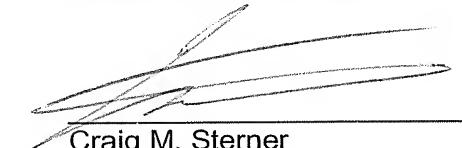
The Examiner has maintained a rejection of claims 4, 13, 18 and 29 under 35 USC 103(a) as being unpatentable over Huang (US 6,342,578) in view of Savariar-Hauck et al. (US 5,695,905). Applicants have canceled claims 4, 13, 18 and 29 without prejudice.

CONCLUSION

For the reasons stated above, claims 1, 2, 7-11, 14-16, 21-25, 27, 28, 31 and 32 are believed to be in condition for allowance. Accordingly, Applicants respectfully request that the Application be allowed. If prosecution may be further advanced, the Examiner is invited to telephone the undersigned to discuss this application.

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Respectfully submitted,



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